

30089  
S/057/61/031/011/004/019  
B104/B108

26.4311

AUTHORS: Kononov, B. P., and Sarksyay, K. A.

TITLE: A high-vacuum plasma source

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 11, 1961, 1294 - 1297

TEXT: An experimental device (Fig. 1) for producing plasma by mixing electron and ion beams in a vacuum system with a pressure gradient is described. In the tubes AB ( $d = 4$  cm,  $l = 1.5$  m) and KD ( $d = 1$  cm,  $l = 1.5$  m) (Fig. 1) a pressure gradient is produced by continuous inlet of air and evacuation. A system of coils generates a longitudinal magnetic field of 200 - 1000 oe. The electrons emitted from the cathode move toward the anode A, and ionize the gas in the anode region. The ions produced in the anode region move in the opposite direction. When the space charge of the electrons is compensated by the space charge of the ion flux, current increases and the capacitor C is rapidly discharged. At this moment, the plasma density in the high-vacuum region reaches a maximum. The plasma density was measured with h.f.-probes. The maximum plasma density was higher than  $10^{12}$  cm<sup>-3</sup>. After the end of discharge the gas

Card 1/64

30089  
S/057/61/031/011/004/019  
B104/B108

A high-vacuum plasma source

pressure was measured with an MH-5 (MN-5) gas-discharge manometer. When voltage was quickly changed from 1 to 3 kv at a pressure of  $2 \cdot 10^{-5}$  mm Hg, the time for initiation of the discharge in the manometer was 200  $\mu$ sec. The gas pressure increased from  $2 \cdot 10^{-5}$  to  $(1-2) \cdot 10^{-4}$  mm Hg. This may be explained by plasma recombination. The experiments showed a delay between the beginning of discharge and the moment at which the discharge current has reached its maximum value. The delay of current development depends on the discharge-capacitor voltage and the pressure gradient in the anode section. Results are illustrated in Figs. 4 and 5. In the capacitor-voltage interval of 10 - 16 kv the ion velocity ( $9 \cdot 10^4$  cm/sec -  $35 \cdot 10^4$  cm/sec) is a linear function of voltage. The authors thank Professor M. S. Rabinovich for interest and advice. There are 6 figures and 9 references: 6 Soviet and 3 non-Soviet. The three references to English-language publications read as follows: P. Reynold, H. M. Skarsgard. CERN, 59-19, 1958; E. R. Garrison, R. H. Dawton, I Electr. and Control., 5, no. 1, 29 - 32, 1958; E. R. Garrison. Phil. Mag., 3, no. 35, 1318 - 1325, 1958.

Card 2/54

9.4/20 (1013, 1105, 1140)

26.23/2

21597

S/109/60/005/010/020/031

E033/E415

AUTHORS: Kononov, B.P. and Sarksyayn, K.A.

TITLE: Some Special Features of a Gas Discharge With Oscillating Electrons

PERIODICAL: Radiotekhnika i elektronika, 1960, Vol.5, No.10, pp.1717-1719

TEXT: The article gives the results of experimental and theoretical investigation into the gaseous discharge potentials between an internal spiral electrode (anode) and an external cylindrical electrode (cathode). This construction was used in a diode for rectification of 50 c/s a.c. voltages up to 2 kV and current values up to 30 mA. Graphs are produced of the forward and reverse striking voltages (0.1 to 10 kV) versus the gas (air) pressure ( $10^{-2}$  to 1 mm Hg) and the reverse-to-forward voltage ratio  $U_{0sp}/U_{np}$  ( $U_{reverse}/U_{forward}$ ) is also plotted. Difference in the reverse and forward striking voltages is explained by the fact that, with forward polarity, the electrons can perform oscillatory movements under the action of the electric field. This leads to increase in the length of the electron path

Card 1/4

21597

S/109/60/005/010/020/031

E033/E415

Some Special Features ...

and to a corresponding reduction in the striking potential. Despite the fact that this method of restraining the electrons is less effective than the magnetic field method, nevertheless, in a number of cases the absence of the magnetic field is a definite advantage. Assuming that the pitch of the spiral  $h$  is less than the diameter of the spiral  $d$ , then  $U_{reverse}$  can be calculated by the formula

$$U = \frac{Bpl_0}{\ln \frac{Apl_0}{\ln(1 + \frac{1}{\gamma})}} \quad (1)$$

where  $A$  and  $B$  are constants;  $p$  is the gas pressure;  $l_0 = (D - d)/2$  (distance between the electrodes,  $D$  being the diameter of the cathode cylinder);  $\gamma$  is the Townsend surface emission coefficient, which depends on  $p$  and  $U$ . There is agreement between the experimental data and the calculated results for values of  $\gamma = 10^{-2}$  to 1 as shown on the plotted results, but with values of  $p$  and  $U$  where  $\gamma$  is greater

Card 2/4

21591

S/109/60/005/010/020/031

E033/E415

Some Special Features ...

than 1, other discharge mechanisms (coronary discharge etc) begin to appear. Eq.(1) does not apply to  $U_{forward}$  because the oscillating electrons create additional ionization in the discharge gap. Taking this into account,  $U_{forward}$  is given by

$$U_{np} = \frac{BD\xi_0 \ln\left(1 + \frac{1}{\gamma}\right)}{A \left[ I_0^2 - \frac{1}{Ap} \eta D \xi \ln\left(1 + \frac{1}{\gamma}\right) \right]} \quad (3)$$

where  $\xi$  is a coefficient of non-homogeneity of ionization in the discharge volume;  $\eta$  is the ratio between the diameter of the wire of the spiral and  $h$ . With values of

$$A = 50 \frac{1}{\text{cm mm Hg}}; \quad B = 1300 \frac{V}{\text{cm mm Hg}}; \quad \xi = 0.7; \quad \log\left(1 + \frac{1}{\gamma}\right) = 5;$$

the formula gives results which agree with the experimental results. There are 3 figures and 5 Soviet references.

ASSOCIATION: Fizicheskiy institut im. P.N.Lebedeva AN SSSR  
(Institute of Physics imeni P.N.Lebedev AS USSR)

Card 3/4

S/057/61/031/005/008/020  
B104/3205

24.2400(1160,1395,1482)

AUTHORS: Kononov, B. P., Rukhadze, A. A., and Solodukhov, G. V.

TITLE: The electric field of an emitter in a plasma located in an external magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 5, 1961, 565-573

TEXT: A study has been made of the electric field in the neighborhood of an emitter in a plasma located in an external field. Measurements were done with the use of two antennas and a single h-f probe. The electric field of a point dipole can be described by

$$\mathbf{E} = -\frac{q}{2\pi^2} \int d\mathbf{k} \frac{\mathbf{k}(\mathbf{k}d) e^{i\mathbf{k}\cdot\mathbf{r}}}{k\epsilon_{ij}(\omega)k_j}, \quad (1)$$

where  $\mathbf{r}$  is the radius vector of the observation point. Neglecting ion motion and particle collisions, the tensor  $\epsilon_{ij}(\omega)$  can be written as

$$\epsilon_{ij}(\omega) = \begin{pmatrix} \epsilon_1 & ig & 0 \\ -ig & \epsilon_1 & 0 \\ 0 & 0 & \epsilon_2 \end{pmatrix}, \quad (2)$$

Card 1/6

The electric field...

S/057/61/031/005/008/020  
B104/B205

where

$$\epsilon_1(\omega) = 1 - \frac{\omega_p^2}{\omega^2 - \omega_{He}^2}, \quad \epsilon_2(\omega) = 1 - \frac{\omega_p^2}{\omega^2},$$

$$g = \frac{\omega_p^2 \omega_{He}}{\omega(\omega^2 - \omega_{He}^2)}, \quad \omega_p^2 = \frac{4\pi n e^2}{m_e}, \quad \omega_{He} = \frac{eH}{m_e c}.$$

In an appendix, it is exactly shown that

$$\left. \begin{aligned} E_z = 0, \quad \frac{E_\perp}{E_0} &= \frac{1}{\epsilon_1(\omega)} \sqrt{\frac{\epsilon_1(\omega)}{\epsilon_2(\omega)}} \quad \text{при } \frac{\epsilon_1}{\epsilon_2} > 0, \\ E_z = E_\perp = 0 &\quad \text{при } \frac{\epsilon_1}{\epsilon_2} < 0. \end{aligned} \right\} \quad (3)$$

holds at  $\vec{r} \perp oz$  and  $\vec{d} \parallel oz$ , while

$$E_z = 0, \quad \frac{E_\perp}{E_0} = \frac{\epsilon_2(\omega)}{\epsilon_1^2(\omega)}. \quad (4)$$

is valid for  $\vec{r} \parallel oz$  and  $\vec{d} \perp oz$ . In these relations,  $E_0$  indicates the amplitude of the electric field of the dipole in a vacuum;  $E_z$  and  $E_\perp$  are the amplitudes of the h-f field in the plasma. In the case of weak magnetic fields ( $\omega_{He} \ll \omega$ ), (3) agrees with (4), and  $E_\perp/E_0$  as a function of

Card 2/6

22777

S/057/61/031/005/008/020  
B104/B205

The electric field...

density becomes infinite at one point. At  $\omega = \omega_e$  the electric field in the plasma as a function of density becomes infinite with the exception of  $\vec{r} \parallel oz$ ,  $\vec{d} \perp oz$  and  $\omega_{He} > \omega$ , where resonance is absent. The field strength  $\vec{E}$  as a function of the field strength of the external magnetic field is of great interest with a fixed plasma density. These properties of an electric field in plasma have been studied with the aid of an arrangement shown in Fig. 3. At a pressure of  $2 \cdot 10^{-2}$  mm Hg (air), a gas discharge was produced between two electrodes in a glass flask 4 mm in diameter and 18 mm long. Transmitting and receiving antennas were inserted from both sides (spacing: about 3 mm). The antennas were made of coaxial cables. In first approximation, the transmitting antenna constituted an emitter which could be considered a dipole oriented along the axis of the cable. The frequency applied was  $\omega = 5.7 \cdot 10^{10} \text{ sec}^{-1}$ , and the receiving signal was amplified and conveyed to an oscilloscope. The solenoid generated a magnetic field of 7000 oe in the discharge tube. The authors studied the resonance of an electric field at small plasma densities, which had been produced by a discharge current of about 1 ma.

Card 3/6



The electric field...

22777  
S/057/61/031/005/008/020  
B104/B205

X

Fig. 8 shows the electrical diagram of the single h-f probe. A comparison between experimental and theoretical results indicates that, in accordance with theory, resonance will occur at  $\epsilon_2(\omega) = 0$  only if the dipole moment of the emitter has a definite orientation with respect to the magnetic field. The experimental density required is slightly different from the theoretical one. This is due to the varying input resistance of the antennas, which complicated the experiments considerably. The authors further examined the possibility of measuring the plasma density with the use of a single h-f probe. This method is based on the dependence of the resonance of the input resistance of the dipole on the plasma density. It could be shown that this method is applicable to both isotropic and anisotropic plasma. There are 9 figures and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Moskva (Institute of Physics imeni P. N. Lebedev, Moscow)

SUBMITTED: June 6, 1960

Card 4/6

L 13681-63

EXT(1)/ENG(k)/BDS/EEC(b)-2/ES(w)-2

AFTTC/ASD/ESD-3/AFWL/

SSD Fz-4/Pi-4/Po-4/Pab-4 AT/LJP(C)

ACCESSION NR: AF3003954

8/0057/63/033/007/0835/0838

81  
79

AUTHOR: Kononov, B. P.

TITLE: Investigation of the process of plasma compression in an opposed-field magnetic trap

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 33, no. 7, 1963, 835-838

TOPIC TAGS: opposed-field magnetic trap, cusped-field configuration, magnetic trap, magnetic mirror, plasma containment experiment, plasma density investigation, plasma stability, plasma research

ABSTRACT: The containment time of cold plasma has been studied experimentally as a function of the change in sign of compression forces acting on the plasma. Data on the spatial density distribution and luminescence of plasma placed in a pulsed cusped-field configuration were obtained. Hydrogen or helium at  $1-2 \times 10^{-5}$  mm Hg were used; field frequency was  $6 \times 10^4$  cps and electron temperature, 10 ev. Probe signals and luminosity photographs showed that plasma was held by the magnetic field. The maximum containment time of 50  $\mu$ sec was reached after the magnetic field period was increased to 200  $\mu$ sec, and thereafter containment time remained constant. It is concluded that constant

Card 1/2

L 13681-63

ACCESSION NR: AP3003954

plasma density can be maintained in principle in a magnetic field varying in time, although the establishment of strong time-varying magnetic fields is difficult. "My sincere appreciation is extended to V. I. Veksler who suggested this approach and to M. S. Rabinovich for his attention and help in my work." Orig. art. has: 3 formulas and 5 figures.

ASSOCIATION: none

SUBMITTED: 04Apr62

DATE ACQ: 07Aug63

ENCL: 00

SUB CODE: PH

NO REF SOV: 008

OTHER: 005

Card 2/2

1.000000-5 EWT(1)/EWG(k)/EPA(sp)-2/EPA(w)-2/EEC(t)/T/EEC(b)-2/EWA(m)-2 Po-4/P1-4/  
NR: AF50.1135 1001/0047/0053  
IJP(c) AT

AUTHOR: Kononov, B. P.

TITLE: Resonance interaction between a plasma bunch and an electro-  
magnetic wave in a waveguide

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 1, 1965, 47-50

TOPIC TAGS: plasma acceleration, waveguide, plasma, plasma interact-  
ion, ~~smoid~~, plasma bunch, radiative plasma acceleration

ABSTRACT: An investigation has been made of the reflection of  $H_{01}$  and  $H_{11}$  waves from a stationary plasma bunch of quasi-spherical form in a circular waveguide.  $H_{01}$  and  $H_{11}$  modes, which are easily excited and can be employed in radiative plasma acceleration, were generated in a circular waveguide 14 cm in diameter. A plasma bunch was formed with the aid of a pulsed gas discharge in a spherical glass bulb placed on the axis of the waveguide. Basic measurements were performed with a bulb 3.5 cm in diameter in the  $1-2 \times 10^{-4}$  mm Hg pressure range. The calculated dependence of electric and magnetic moments on plasma density coincided with the experimental results. Resonance wave

Card 1/2

L 23292-65

ACCESSION NR: AP5003235

scattering can play an essential role in radiative acceleration of plasma: When the wave is scattered by a relatively large plasma bunch, the "radiative friction" is large and the resonance relatively weak; however, when the wave is scattered by small objects, the resonance effect is intensified considerably and can be used for increasing the effectiveness of radiative acceleration. Orig. art. has: 4 figures and 1 formula. [JA]

ASSOCIATION: none

SUBMITTED: 16Feb64

ENCL: 00

SUB CODE: ME,EM

NO REF SOV: 005

OTHER: 004

ATD PRESS: 3173

Card 2/2

L 23060-65 EWT(d)/EWT(1)/EWG(k)/EPA(sp)-2/EEC(k)-2/EEC-4/EPA(w)-2/EEC(t)/T/  
EEC(b)-2/EWA(m)-2 Pg-4/Pi-4/Pk-4/P1-4/Po-4/Pq-4/Pz-6/Pab-10 JP(c) AT

ACCESSION NR: AP5003236

S/0057/65/035/001/0051/0055

AUTHOR: Kononov, B. P.; Sarksyian, K. A.; Silin, V. A.; Tsopp, L. E. *B*

TITLE: Plasma acceleration<sup>21</sup> with the aid of an electromagnetic H<sub>11</sub>-type wave in a circular waveguide

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 1, 1965, 51-55

TOPIC TAGS: plasma, plasma acceleration, plasma bunch, circular waveguide, electromagnetic wave

ABSTRACT: The acceleration of plasma bunches with the aid of a strong electromagnetic H<sub>11</sub> wave in the decimeter range in a circular waveguide has been experimentally investigated. The plasma was generated by a source with a pressure drop. An external magnetic field was used to confine the plasma bunch. The experimental setup consisted of a superhigh-frequency generator, a plasma source, an accelerating waveguide with a focusing magnetic field, and measuring devices. <sup>21</sup>The generator produced single 1.5 Mw pulses of 10 usec duration. An H<sub>01</sub> wave from a rectangular waveguide was transformed into an H<sub>11</sub> wave in a circular waveguide. The pressure in the waveguide was  $1-2 \times 10^{-6}$  mmHg.

Card 1/2

L 23060-65

ACCESSION NR: AP5003236

The measurements showed that during a radiative plasma acceleration the ions acquired different energies. The character of the interaction of the wave with the plasma depends on the relationship between the frequency of the incident wave ( $\omega$ ) and the frequency of the Langmuir oscillations in the plasma ( $\omega_e$ ). At  $\omega > \omega_e$  the plasma bunch is transparent, and if its size is smaller than the wavelength a coherent interaction takes place and the total acting force is proportional to the number of electrons in the plasma bunch. It is suggested that ions with energies of 50 keV and higher appear as a result of resonance acceleration of plasma bunches of small effective size. Such bunches can appear during plasma decay. Orig. art. has: 5 figures.

[JA]

ASSOCIATION: none

SUBMITTED: 16Feb64

ENCL: 00

SUB CODE: ME,EM

NO REF SOV: 006

OTHER: 002

ATD PRESS: 3173

Card 2/2.

EWG(k)/EPA(sp)-2/EPA(w)-2/EFC(t)/EFC(h)-2/EWA(m)-2  
 10/11-4 IUF(c) CM/AT

AP5001998

5/0049 65 11-11 1/0011/0018

Veksler, V. I.; Gekker, I. R.; Gol'ts, E. Ya; Delone, G. A.; Kononov, B. P.;  
 T. V.; Luk'yanchikov, G. S.; Galinov, V. G.; Surkanyan,  
 A. F.; Sillin, V. A.; Tsol, L. A.

Interaction of plasma bunches with an electromagnetic wave

SOURCE: Atomnaya energiya, v. 18, no. 1, 1965, 11-18

TOPIC TAGS: plasma clot, plasma clot acceleration, plasma clot  
 radiative acceleration, H sub 01 wave, H sub 11 wave

ABSTRACT: Preliminary experimental results are given of an investi-  
 gation of the radiative acceleration of plasma in circular waveguides.  
 Investigation was conducted in a 10-10 range with H<sub>01</sub> and H<sub>11</sub>  
 waves. Different plasma injectors were used. Plasma bunches with an  
 particle concentration of 10<sup>12</sup> cm<sup>-3</sup> and higher were injected  
 with 2.5 x 10<sup>6</sup> cm/sec velocity from a spark source or were generated  
 directly on the axis of the waveguide by means of a plasma source at  
 a pressure drop of 10<sup>-7</sup>—10<sup>-6</sup> mm Hg of the operating vacuum in an  
 accelerator. Electric detectors, superhigh-frequency methods, and an  
 electrostatic analyzer of particle energy were used for the investiga-

Card 1/2



L 23868-65

ACCESSION NR: AP5003998

tion. External magnetic fields with various configurations were used to confine the plasma. Accelerated ions with energies exceeding 10 keV were obtained regardless of the type of wave in the waveguide or the kind of plasma injector. The energy of the accelerated ions increased as the superhigh-frequency power increased. The total number of accelerated particles was of the order of  $10^{12}$ . Maximum energy was 50 keV. The application of nonhomogeneous fields for the stabilization of the transverse dimensions of plasma bunches was shown to be feasible. There were practically no plasma losses on the waveguide when quadrupole or sextupole magnetic fields were used. Orig. text, last 7 figures. [JA]

ASSOCIATION: none

SUBMITTED: 22Apr64

ENCL: 00

SUB CODE: ME, EM

NO REF SOV: 008

OTHER: 001

ATD PRESS: 3178

Card 2/2

L 3964-66

ACC NR: AP5025884 EWT(1)/ETC/EPF(n)-2/EWG(m)/EPA(w)-2 IJP(c) AT

UR/0057/65/035/010/1755/1756  
533.9

AUTHOR: Kononov, B. P.

TITLE: Plasma acceleration in a constant electric field combined with high-frequency field  
44.55 21.44.55 56 B

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 10, 1965, 1755-1756

TOPIC TAGS: plasma, plasma acceleration, cyclic plasma acceleration, doughnut accelerator, doughnut plasma accelerator, energy exchange, energy transfer

ABSTRACT: A theoretical discussion is presented of plasma acceleration by various methods in which only electrons in a homogeneous plasma are affected by the forces applied. The difficulty here is that the acceleration of electrons results in an electric current, while the plasma as a whole remains unaffected. The situation can be corrected by application of a longitudinal electric field capable of compensating for electron acceleration. It is demonstrated analytically that the addition of such a field causes electrons and ions to move with equal velocities and thus brings about an acceleration of the plasma as a whole. At the same time, the electric current in the direction of acceleration will be reduced to zero; the applied field, therefore, is used exclusively for the redistribution of acting forces. The method is of interest in cyclic acceleration of plasma, particularly in toroidal arrangements where parasitic electric current is generated. Here, application of a supplementary electric field or

Card 1/2

PC

Card 2/2

L 4241-66 EWT(1)/ETC/EPF(n)-2/ENG(m)/EPA(w)-2 LJP(c) GS/AT

ACCESSION NR: AT5007972

S/0000/64/000/000/1017/1022

AUTHOR: Veksler, V. I.; Gekker, I. R.; Gol'ts, E. Ya.; Delone, G. A.; Kononov, B. P.; Kudrevatova, O. V.; Lyk'yanchikov, G. S.; Rabinovich, M. S.; Savchenko, M. S.; Sarksyian, K. A.; Sergeychev, K. V.; Silin, V. A.; Tsopp, L. E.; Levin, M. L.; Muratov, R. Z.

TITLE: Radiational acceleration of plasma

SOURCE: International Conference on High Energy Accelerators. Gubna, 1963. Trudy. Moscow, Atomizdat, 1964, 1017-1022

TOPIC TAGS: high energy accelerator, plasma acceleration, plasma waveguide

ABSTRACT: The practical realization of the radiational method of plasma acceleration (Veksler, V. I. CERN Symposium, 1956; *Atomnaya energiya* 2, 427, 1957) is connected with the utilization of a different kind of waveguide structure, within which a plasma bunch moves under acceleration by an electromagnetic field. Two such waveguide structures, differing in type of accelerating wave and in method of plasma injection, were produced recently in the Physics Institute, AN SSSR. Initial experiments showed that radiational acceleration of plasma was achieved in both of the structures. At the same time the Radiotechnical Institute, AN SSSR,

Card 1/2

SUBMITTED: 26May64

NO REF SOV: 008

BVK

Card 2/2

ENCL: 00

OTHER: 003

SUB CODE: NP

KOMONOV, B. V., Cand Tech Sci -- (diss) "Mechanization of the preparation of crude fodder." Saratov, 1960. 16 pp; with graphs; (Ministry of Agriculture RSFSR, Saratov Agricultural Inst); 150 copies; free; (KL, 21-60, 124)

KONDRAT'YEV, Afanasiy Borisovich, kand.tekhn.nauk; YERSHOVA, Galina Nikolayevna, inzh.; MEN'SHIKOV, Ivan Alekseyevich, prof., doktor tekhn.nauk; MOSKOVSKIY, Mikhail Ivanovich, kand.tekhn.nauk; SOBOLEV, David Iosifovich, kand.tekhn.nauk; SMIL'GEVICH, Petr Kazimirovich, inzh.; SHIROKOV, Boris Ivanovich, kand.sel'sko-khoz.nauk. Prinimali uchastiye: TREBIN, Boris Nikolayevich, inzh.; OSOBOV, Vadim Izrailevich, inzh. BRIK, P.A., prepodavatel', retsenzent; IVANOV, V.A., prepodavatel', retsenzent; KOGANOV, A., prepodavatel', retsenzent; KONONOV, B.V., prepodavatel', retsenzent; MARKOV, G.Ya., prepodavatel', retsenzent; OSIPOV, G.P., prepodavatel', retsenzent; RYABOV, P.I., prepodavatel', retsenzent; SOLOV'YEV, K.Ya., prepodavatel', retsenzent; SOROKIN, V.Ya., prepodavatel', retsenzent; BANNIKOV, P., red.; VORONKOVA, Ye., tekhn.red.

[Manual for collective farm machinery operators] Spravochnik mekhanizatora sel'skogo khoziasistva. Penza. Penzenskoe knizhnoe izd-vo, 1959. 610 p. (MIRA 14:2)

1. Saratovskiy institut mekhanizatsii sel'skogo khozyaystva imeni M.I.Kalinina (for Brik, Ivanov, Koganov, Kononov, Markov, Osipov, Ryabov, Solov'yev, Sorokin).  
(Agricultural machinery) (Farm mechanization)

SOV/133-58-11-6/25

**AUTHORS:** Boychenko, M.S., Candidate of Technical Sciences,  
Gavrilov, O.T., Kan, Yu.B. and Kononov, B.Z., Engineers

**TITLE:** Semi-continuous Casting of Stainless Steel (*Polunepri-  
yvnaya razlivka nerzhavayushchey stali*)

**PERIODICAL:** Stal', 1958, <sup>18</sup>Nr 11, pp 983 - 987 (USSR)

**ABSTRACT:** Semi-continuous casting of steel 1Kh18N9T into slabs  
175 x 300 mm for the production of cold-rolled sheets  
is described. Steel is smelted in a 20ton basic electric  
furnace and after casting eight 4-ton ingots the remaining  
steel is poured into an intermediate capacity preheated  
to 1 100 - 1 200 °C of the semi-continuous casting  
machine. From the intermediate capacity the metal is  
passed into a crystalliser (mould) through a 90° bend  
passage with a velocity of 1 100 - 1 200 mm/min and is  
cast into slabs 4 500 mm long, weighing 1 700 kg. The  
initially used and subsequently modified casting equip-  
ment is shown in figures 1 and 2, respectively. The  
main difficulty in obtaining quality sheets was the  
formation of skin on the surface of the metal in the  
crystalliser and its subsequent passage into the ingot.  
To prevent this, a wooden plank is placed on the level  
of the metal of a somewhat smaller cross-section than

Card1/4

Semi-continuous Casting of Stainless Steel

SOV/133-58-11-6/25

that of the slab. In the centre of the plank, an opening for the passage of the stream of metal is made. Such planks protect the surface of the metal from oxidation, decrease heat losses and form a good lubrication of the walls of the crystalliser during casting, as they evolve volatiles condensing on the walls. The above considerably decreased the formation of skin. Cast slabs are weighed and cut into measured lengths using an aluminium-magnesium powder (the width of the cut 8-12 mm). From the head part about 250 mm (about 5.5% of the length) is cut off in order to remove shrinkage cavity (Figure 3). The surface of the slabs is planed to a depth of about 5 mm. The macrostructure of the cast slab is shown in Figure 4. Two main forms of non-metallic inclusions were observed: a) titanium nitrides, situated in groups in the underskin layer, in the axial zone at a distance of  $1/4$  of the slab thickness (Figure 5a); b) very fine inclusions in the form of thin, broken chains which are probably carbo-nitrides (Figure 5b). The microstructure of the metal was dendritic, more coarse in the middle than at the surface of the slab (Figure 6). Mechanical properties and

Card2/4

Semi-continuous Casting of Stainless Steel <sup>SOV/133-58-11-6/25</sup>

resistance to inter-crystalline corrosion of cold-rolled sheets from ordinary and semi-continuously cast ingots was approximately the same and corresponded to requirements of TU 3126-52. The surface quality of the sheets from the above two kinds of ingots was the same. The process of crystallisation of semi-continuously cast slabs was investigated using radioactive phosphorus. Samples of radioactive phosphorus mixed with powdered iron and enclosed in a copper tube (about 100 mm long) were fixed to a steel rod which was introduced into the slab immediately after the end of casting (casting velocity 1 000 mm/min). The results of the investigation (shown in Figure 7) indicated that permissible linear velocity of casting is within a range of 1 100 - 1 200 mm/min. During the development of the practice, altogether 130 tons of the steel were cast in this manner with a coefficient of utilisation of metal of 1.96 instead of 2.11 when producing cold-rolled sheets from ingots. There are 7 figures and 2 Soviet references.

Card3/4



<sup>57</sup>  
~~Sci~~-continuous Casting of Stainless Steel

SOV/133-58-11-6/25

ASSOCIATIONS: TsNIChM and Zavod "Krasnyy Oktyabr'"  
("Krasnyy Oktyabr'" Works)

Card 4/4

SOV/133-58-11-9/25

**AUTHORS:** Il'in, A.G. and Kononov, B.Z., Engineers

**TITLE:** Investigation of a Metal Stream Using High-speed  
Cinephotography (Issledovaniye strui metalla s pomoshch'yu  
skorostnoy kinos'yemki)

**PERIODICAL:** Stal', 1958, <sup>10</sup>№ 11, pp 994 - 995 (USSR)

**ABSTRACT:** The behaviour of a stream of liquid steel during tapping  
and teeming was investigated using high-speed cine-  
photography. The type of camera used (Figure 1) and some  
details of filming and developing technique are given.  
The results obtained are illustrated. (Figures 2-7).  
There are 7 figures.

**ASSOCIATIONS:** TsNIICHM and zavod "Krasnyy Oktyabr'"  
("Krasnyy Oktyabr'" Works)

Card 1/1

KONONOV, B. Z.

# ДЕГАЗАЦИЯ СТАЛИ И СПЛАВОВ

М.А.Шумков П.В.Гончаров Ф.А.Семаров	Некоторые особенности процесса раскисления ферросплавов.
Р.А.Рубин П.В.Гончаров	Влияние углерода на водородонепроницаемость стали.
Г.И.Озеров А.Ю.Павлов А.М.Семаров	Особенности раскисления стали при различных методах продувки.
А.М.Семаров М.П.Кузнецов Д.П.Удальцов А.М.Николаев А.М.Лукотко	Повышение качества ферросплавов различными методами обработки и в ванне.
Г.И.Озеров М.И.Александров Г.А.Семаров В.И.Семаров В.З.Михайлов	Новые методы раскиснения и раскиснения стали с учетом особенностей.
Г.И.Озеров В.Г.Чирков	Влияние продувки на содержание кислорода в стали при ее охлаждении.
М.В.Павлов В.И.Семаров	Влияние газовой фазы на раскиснение стали на основании особенностей раскиснения в ванне и металлической ванны.
Г.И.Озеров М.П.Кузнецов В.С.Михайлов	Влияние продувки на содержание кислорода в стали на основании метода DEGASING.

17

report submitted for the 5th Physical Chemical  
Conference on Steel Production, Moscow-- 30 Jan 1979.

8/133/50/000/004/007/0.0  
1034/AD26

## AUTHORS

O'ke, G. M., Professor Katergorian, P. P., Engineer, Skolo:  
G. A., Engineers Amshelov, Y. A., Doctor  
Meerl Kornarov, B. Z., Engineer  
Savitskiy, V. I., Engineer

5715

PERIODICAL: Steel, 1960, No. 4, p. 22.

TEXT: The following is a list of the names of the persons who were present at the meeting of the Board of Directors of the American Red Cross, held on the 10th day of June, 1917, at the Hotel New York, New York City.

[illegible]

Card :/4

rates of 5 to 10 mm the pump capacity was 25 - 40 m<sup>3</sup>/min. In order to raise the output of the pump system, steam jet ejectors were mounted at the outlet, producing a vacuum of 150 - 400 mm Hg. During the tests the vacuum treatment in the ladle was carried out: a) partly in accordance with the conventional technology, and b) partly in accordance with a modified process. In the first case the vacuum was applied to the ladle only after the start of the deoxidation process, in the second case the vacuum was applied to the ladle long before the start of the deoxidation process, and in order to maintain it in the ladle had only the effect on deoxidation, and in order to obtain a satisfactory deoxidation rate of the metal it was necessary that the oxygen content in the metal, before the vacuum treatment be present in the form of isolated or in the form of effectively dissolving agents, such as silicon and aluminum (Ref. 6) were added from the ladle. Therefore the reduction was carried out without ferrizing the vacuum treatment, namely for the purpose of alloying. According to the new technology, namely for the purpose of alloying. According to the furnace with at least 1.0% C in the steel when furnace 2, the basic arc was maintained at 1,600 - 1,620°C before blowing off the slag, temperature 1,100 - 1,150°C, essential higher than the usual temperature allowing reserve for the subsequent vacuum treatment. After removing the slag, fer-

Card 2/4

[illegible]

Card 3/4

## New Process for Making Ball-Bearing Steel

5/135/60/000/001/002/010  
A054/A026

corresponding to the average silicon content of the steel produced) and a titanium (160 g/t) were added. Then the metal was held for a second time for 1.5 - 2 min. The complete anneal treatment took only 6 - 10 min. The iron base metal was then cooled in air. The amount of oxygen dissolved in the iron base metal in the conventional process (permitted to a higher degree) was 63% and aluminum to 56% (instead of 34%). The iron-silicon content and the globular inclusions according to the 100-100-80 (50-80-80) conditions were analyzed quantitatively according to the method of [1]. The chemical and metallographic tests on non-metallic inclusions also proved the greater purity of the steel. The new method of aluminum refining was shortened, reduction took 20 min less, the consumption of deoxidizing agents and the quantity of waste products decreased, the saving was 15-20% (Table 1). There were 4 Figures and 7 tables and 7 Soviet references.

**Case 4/4**

S/133/60/000/009/011/015  
A054/A029

AUTHORS: Kan, Yu.Ye., Matevosyan, Ye. P., Kononov, B.Z.

TITLE: Comparing the Quality of 1X18H9T (1Kh18N9T) Ingots Produced by the Semi-Continuous and by the Conventional Methods

PERIODICAL: Stal', 1960, No. 9, pp. 846-849

TEXT: From the ingots produced according to the conventional methods in a basic arc furnace a longitudinal template was made, while from the ingots produced according to the "semi-continuous" method longitudinal and transverse templates were made in various arrangements. As to the macrostructure, no basic difference was found between the two kinds of specimens, in the "semi-continuous" specimens, however, an external approximately 7 mm thick case was observed; furthermore, the crystallites in these specimens had a somewhat smaller cross-section in the transcrystallization zone. The microstructural tests confirmed the assumption of several authors (Ref. 2) that the quantity of  $\alpha$ -phase decreases as the crystallization rate increases. In the border-zone of the "semi-continuous" ingots the inclusions of the  $\alpha$ -phase are smaller and are more evenly distributed over the basic austenite structure than in the conventional ingots. Chemical ana-

Card 1/2

S/133/60/000/009/011/015  
A054/A029

Comparing the Quality of 1X18H9T (1Kh18N9T) Ingots Produced by the Semi-Continuous and by the Conventional Methods

lyses showed that elements such as C, P, Si and S are evenly distributed horizontally and vertically in both kinds of specimens: otherwise, with regard to chemical nonhomogeneity hardly any difference was found between the two types tested. In the case of "semi-continuous" ingots surface defects penetrate somewhat deeper than in the case of the other type. Structure and distribution of non-metallic inclusions were investigated by electrochemical and metallographic methods and it was found that their vertical distribution in the ingots is more uniform in the "semi-continuous" ingots than in the conventional ones, while the distribution of inclusions in the cross-section is more or less the same for both types. Investigation of gas-inclusions in the ingots showed that the distribution of hydrogen and nitrogen is more uniform in the "semi-continuous" ingots than in the conventional ones: the vertical distribution of oxygen is rather uniform in the "semi-continuous" ingots, while this is not the case, for both types, as far as their cross-sections are concerned. There are 6 figures, 2 tables and 3 Soviet references.

ASSOCIATION: TsNIChM and Zavod "Krasnyy Oktyabr'" ("Red October" Plant)

Card 2/2

KUNONOV, B Z.

PHASE I BOOK EXPLOITATION

80V/5556

85

Moscow. Institut stali.

Novoye v teorii i praktike proizvodstva martenovskoy stali (New [Developments] in the Theory and Practice of Open-Hearth Steelmaking) Moscow, Metallurgizdat, 1961. 439 p. (Series: Trudy Mezhvuzovskogo nauchnogo soveshchaniya) 2,150 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy institut stali imeni I. V. Stalina.

Eds.: M. A. Olinkov, Professor, Doctor of Technical Sciences, V. V. Kondakov, Professor, Doctor of Technical Sciences, V. A. Kudrin, Docent, Candidate of Technical Sciences, G. N. Oys, Professor, Doctor of Technical Sciences, and V. I. Yavovskiy, Professor, Doctor of Technical Sciences; Ed.: Ye. A. Borko; Ed. of Publishing House: N. D. Gromov; Tech. Ed.: A. I. Karasev.

PURPOSE: This collection of articles is intended for members of scientific institutions, faculty members of schools of higher education, engineers concerned with metallurgical processes and physical chemistry, and students specializing in these fields.

Card 1/14

New [Developments] in the Theory (Cont.)

80V/5556

COVERAGE: The collection contains papers reviewing the development of open-hearth steelmaking theory and practice. The papers, written by staff members of schools of higher education, scientific research institutes, and main laboratories of metallurgical plants, were presented and discussed at the Scientific Conference of Schools of Higher Education. The following topics are considered: the kinetics and mechanism of carbon oxidation; the process of slag formation in open-hearth furnaces using in the charge either ore-lime briquets or composite flux (the product of calcining the mixture of lime with bauxite); the behavior of hydrogen in the open-hearth bath; metal desulfurization processes; the control of the open-hearth thermal melting regime and its automation; heat-engineering problems in large-capacity furnaces; aerodynamic properties of fuel gases and their flow in the furnace combustion chamber; and the improvement of high-alloy steel quality through the utilization of vacuum and natural gases. The following persons took part in the discussion of the papers at the Conference: S.I. Filippov, V.A. Kudrin, M.A. Glinkov, R.P. Nam, V.I. Yavovskiy, G.M. Oyko and Ye. V. Chelishchev (Moscow Steel Institute); Ye. A. Kazachkov and A. S. Kharitonov (Zhdanov Metallurgical Institute); N.S. Mikhaylets (Institute of Chemical Metallurgy of the Siberian Branch of the Academy of Sciences USSR); A.I. Stroganov and D. Ya. Povolotskiy (Chelyabinsk Polytechnic Institute); P.V. Umrikhin (Ural Polytechnic Institute); I.I. Fomin (the Moscow "Serp i molot" Metallurgical Plant); V.A. Fuklev (Central Asian Polytechnic Institute).

Card 2/14



New [Developments] in the Theory (Cont.)

BOV/5556

and M.I. Beylinov (Night School of the Dneprodzerzhinsk Metallurgical Institute).  
References follow some of the articles. There are 268 references, mostly Soviet.

TABLE OF CONTENTS:

Foreword

5

Yavovskiy, V. I. [Moskovskiy institut stali - Moscow Steel Institute].  
Principal Trends in the Development of Scientific Research in Steel  
Manufacturing

7

Filippov, S. I. [Professor, Doctor of Technical Sciences, Moscow Steel  
Institute]. Regularity Patterns of the Kinetics of Carbon Oxidation  
in Metals With Low Carbon Content

15

[V. I. Antonenko participated in the experiments.]

Levin, S. L. [Professor, Doctor of Technical Sciences, Dnepropetrovskiy  
metallurgicheskiy institut - Dnepropetrovsk Metallurgical Institute].

Card 5/14

New [Development] in the Theory (Cont.)

BOV/5556

9

Oyko, G.N., V.I. Danilin [Engineer], I.I. Ansheles [Docent, Candidate of Technical Sciences], G.A. Sokolov, and B.Z. Kononov [Engineers], [Moscow Steel Institute, "Krasnyy Otktyabr'" Plant]. Manufacture of Roll-Bearing Steel With the Application of Ladle-Vacuum Treatment to Non-Deoxidized Metal

335

Kravchenko, V.F. [Candidate of Technical Sciences], Ye. V. Abrosimov, and L.A. Lararev [Engineer], [Moscow Steel Institute, Magnitogorsk Metallurgical Combine]. Improving the Quality of Rimmed-Steel Ingot by Vibration

343

[Ye. I. Rabinovich, Candidate of Technical Sciences, M.K. Skul'skiy, A.O. Nikolayev, Yu. A. Goncharevskiy, and N.O. Zarnhitskaya, Engineers, participated in the research work]

Nekrasov, Yu. V. [Engineer, Kuznetsk Metallurgical Combine]. Properties of Carbon and Alloy Steel Deoxidized by Different Methods  
[V.N. Maslova, S.M. Yermenko, Ye. I. Gulyayeva, L.V. Glashova, and Z.A. Ustalova participated in the research work]

351

Card 12/ 14

KONONOV, B Z.

115

PHASE I BOOK EXPLOITATION

SOV/5411

Konferentsiya po fiziko-khimicheskim osnovam proizvodstva stali. 5th,  
Moscow, 1959.

Fiziko-khimicheskiye osnovy proizvodstva stali; trudy konferentsii  
(Physicochemical Bases of Steel Making; Transactions of the  
Fifth Conference on the Physicochemical Bases of Steelmaking)  
Moscow, Metallurgizdat, 1961. 512 p. Errata slip inserted.  
3,700 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Institut metallurgii imeni  
A. A. Baykova.

Responsible Ed.: A. M. Samarin, Corresponding Member, Academy  
of Sciences USSR; Ed. of Publishing House: Ya. D. Rozentsveyg.  
Tech. Ed.: V. V. Mikhaylova.

Card 1/16

Physicochemical Bases of (Cont.)

SOV/5411

**PURPOSE:** This collection of articles is intended for engineers and technicians of metallurgical and machine-building plants, senior students of schools of higher education, staff members of design bureaus and planning institutes, and scientific research workers.

**COVERAGE:** The collection contains reports presented at the fifth annual convention devoted to the review of the physicochemical bases of the steelmaking process. These reports deal with problems of the mechanism and kinetics of reactions taking place in the molten metal in steelmaking furnaces. The following are also discussed: problems involved in the production of alloyed steel, the structure of the ingot, the mechanism of solidification, and the converter steelmaking process. The articles contain conclusions drawn from the results of experimental studies, and are accompanied by references of which most are Soviet.

Card 2/18

Physicochemical Bases of (Cont.)

SOV/5411

- B. Z. Kononov. New Techniques in Making Ball-Bearing Steel With the Use of Vacuum 466
- Ageyev, P. Ya., and B. G. Chernov. The Effect of Alloying Elements on Oxygen and Nitrogen Behavior During Melting in Vacuum 474
- Polin, I. V., and E. I. Serebriyskiy. Content of Gases and Nonmetallic Inclusions in Stainless Steel Remelted in a Vacuum Electric Furnace 483
- Vorob'yeva, T. M., I. P. Zabaluyev, Ye. S. Kalinnikov, and A. F. Tregubenko. Effect of Ladle-to-Ladle Vacuum Pouring on the Quality of 30 KhGSNA Steel 495
- [The following persons participated in the research:  
T. M. Bobkov, Yu. P. Shamil', G. P. Parkhomenko,  
N. M. Shabli, and A. N. Men'.]

Card 15/16

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824320001-1

18 32 00

S/137/61/000/011/028/123  
A060/A101

AUTHORS: Oys, G.N., Danilin, V.I., Ansholes, I.I., Sokolov, G.A., Kononov, B.Z.

TITLE: Production of ball-bearing steel with the use of ladle-vacuuming of the unreduced metal

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 11, 1961, 59, abstract 11V346 (V sb. "Novyye v teorii i praktike proiz-va martenovsk.stali", Moscow, Metallurgizdat, 1961, 335-342, Discuss. 428 - 439)

TEXT: According to the new technique the smelting of ball-bearing steel in basic furnaces is carried out with complete oxidation and resmelting. The oxidation period is carried out forcedly with the use of ore. The vat temperature before the elimination of the oxidizing slag is 1,590-1,620°C. After drawing off the oxidizing slag and correcting the metal with respect to its C content, Cr and Mn content, one adds in a single dose a slag mixture (3% of the weight of the metal) consisting of lime, spar, chamotte and Dinas block. Then a portion of ground coke is put on top of the slag, the furnace is hermetically closed and soaking proceeds for 20-25 min. After attaining an S content of 0.015-0.008% the smelt is

Card 1/2

Production of ball-bearing steel ...

32528

9/137/61/000/011/028/123

AO60/A101

led out into a ladle together with the slag. In the course of vacuum treating the unreduced metal in the ladle, a vigorous bubbling proceeds and takes 5-6 min. Thereupon 75% Fe-Si and Al are introduced from a special bunker under vacuum. At the end of the vacuuming the metal is cast into 4.1 ton ingots. The quality of the steel was determined by the statistical method from a large number of heats melted according to the experimental and the usual techniques. The quality of the metal obtained was better. The nonmetallic impurity content constituted 0.00254% as compared to 0.00410%. The dimensions of the globules in the metal of the ordinary heats is 16-18  $\mu$ , and in the experimental heats up to 10  $\mu$ . The task of the reducing period of the heat according to the new technique is the application of active desulfurating slag and the correction of the chemical composition. The mean duration of that period is 1.32 hrs as compared to 1.70 hrs in ordinary heats, the total heat duration was shortened by 20 min, and the reducer expenditure was decreased considerably, as result of which the production cost of steel was decreased by 15 rub. per ton.

Yu. Nechkin

[Abstracter's note: Complete translation]

Card 2/2

S/137/61/000/008/009/037  
A060/A101

AUTHORS: Danilin, V. I., Ansheles, I. I., Sokolov, G. A., Kononov, B. Z.

TITLE: New technique for producing ball-bearing steel under vacuum

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 8, 1961, 35, abstract 8V219  
(V sb. "Fiz.-khim. osnovy proiz-va stali". Moscow, Metallurgizdat, 1961, 466-473)

TEXT: The authors describe the results of an investigation of the quality of ball-bearing steel smelted by a new technique involving the use of vacuum at the plant "Krasnyy Oktyabr". The new technique provides for the reduction of the metal in a Fe-Mn furnace, and that of the slag - by ground coke. The metal is subjected to vacuum treatment in the ladle at an end pressure of 4 - 8 mm of mercury for a period of 8 - 10 min. About two minutes before the end of the vacuum treatment one introduces 3.6 kg/ton of 75% Fe-Si and 0.16 kg/ton of Al, and thereupon the metal is poured in air. The technique described ensures a maximum utilization of the reducing properties of C and a high degree of assimilation of Si (90%) and Al (56%). The shift to the new technique has led to a

Card 1/2

APPROVED FOR RELEASE: 06/19/2000

CIA-RDP86-00513R000824320001-

S/137/61/000/008/009/037  
A060/A101

New technique for producing ...

lowering of non-metallic impurities in the finished steel, and also to a reduction in the duration of the reduction process and reduction in the expenditure of deoxidizing agents.

V. Shumskiy

[Abstracter's note: Complete translation]

Card 2/2

S/133/62/000/004/003/008  
A054/A127

11500  
AUTHORS:

Kononov, B.Z.; Kolpakov, A.I.; Shurygin, G.D.; Engineers

TITLE:

Semicontinuous casting of stainless steel under synthetic slag

PERIODICAL:

Stal', no. 4, 1962, 313 - 315

TEXT:

In casting titanium-containing stainless steel, a floating skin forms on the meniscus of the metal in the crystallizer, whose creases may cause severe flaws in the ingot. This skin contains a great amount of non-metallic inclusions. By casting in a shielding atmosphere (argon or propane) it is only possible to avoid those inclusions which are formed on the metal surface, whereas inclusions emerging from the depth of the bath cannot be trapped by this method. It was found more expedient to cover the metal meniscus with liquid slag which absorbs the non-metallic inclusions more thoroughly. The following synthetic slag compositions were tested [ (1) traces; (2) heat; ]:

Плавка	CaF <sub>2</sub>	SiO <sub>2</sub>	CaO	Na <sub>2</sub> O	MnO	FeO	Fe <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	MgO	P <sub>2</sub> O <sub>5</sub>	S
A A (2)	39.08	34.53	20.23	4.78	0.20	0.08	0.02	0.03	0.33	0.27	0.34	0.027	0.033
B B	41.52	34.48	14.79	4.98	0.25	0.08	0.02	0.09	0.28	0.23	0.26	0.032	0.072
C B	47.28	31.60	11.13	5.48	0.10	0.03	0.04	0.02	0.22	0.10	0.10	0.032	0.043
D F	40.20	34.24	20.28	4.62	0.13	0.08	—	—	0.70	0.33	CaCl <sub>2</sub> (1)	0.033	0.062

Card 1/3

S/133/62/000/004/003/008  
A054/A127

Semicontinuous casting....

An ingot surface of good quality could be obtained only with a fluid slag, when over the entire perimeter of the slag meniscus a thin slag lining formed on the crystallizer walls. When the density of the slag increased and slag lumps formed, which fell in the gap between the crystallizer wall and the ingot, a rough ingot surface was obtained. Consequently, the synthetic slag used should not contain much aluminum oxide which affects the viscosity of the slag, but more sodium oxide which ensures its required fluidity. The optimum slag quantity when casting 175 x 600 mm ingots of 4 - 6 tons, was about 60 - 75 kg, i.e. about 11 kg/1 ton steel. The slag is fed into the crystallizer in two batches: the first, when the crystallizer is filled with metal up to 100 mm and the second when half the ingot is cast. The yield of flawless product increased by 13 - 75% when synthetic slag was used during semicontinuous casting:

	A(with slag)	B(without slag)
Metal waste in cropping	8,65	6,9
Metal waste in roughing	11,42	10,2
Slab rejects	2,95	13,8
Technological waste	18,11	18,35
Rejects of hot-rolled sheets	0,5	7,0

Card 2/3



Semicontinuous casting....

S/133/62/000/004/003/008  
A054/A127

	A(with slag)	E(without slag)
Rejects due to intergranular corrosion	1,77	0,9
Yield of flawless hot-rolled sheets	56,6	42,85

By improving the technology of the process it is expected to raise the output beyond the present 59 - 71% level. There is hardly any difference in mechanical properties between the ingots of the conventional method and those produced by semi-continuous casting under synthetic slag. There are 4 figures and 4 Soviet-bloc references.

ASSOCIATION: Krasnyy Oktyabr' Plant

Card 3/3

KONONOV, B.Z., inzh.; KOLPAKOV, A.I., inzh.; SHURYGIN, G.D., inzh.

Semicontinuous pouring of stainless steel under synthetic slag.  
Stal' 22 no.4:313-315 Ap '62. (MIRA 15:5)

1. Metallurgicheskiy zavod "Krasnyy Oktyabr'".  
(Continuous casting) (Steel, Stainless)

PITAK, N.V.; KONONOV, B.Z.; KOLPAKOV, A.I.; D'YACHENKO, A.I.

Service of refractories in a semicontinuous steel casting  
plant. Ogneupory 27 no.7:314-323 '62. (MIRA 15:8)

1. Ukrainskiy nauchno-issledovatel'skiy institut ogneuporov (for  
Pitak). 2. Volgogradskiy metallurgicheskiy zavod "Krasnyy  
Okt'yabr'" (for Kononov, Kolpakov, D'yachenko).  
(Refractory materials) (Continuous casting)

KONONOV, D.

Progressive work methods. Den. i kred. 14 no.11:40-42 № '56.  
(MLRA 9:12)

(Banks and banking)

KONONOV, D.

The regional economic council and the bank. Den.1 kred. 15 no.9:41-42  
S '57. (MIRA 10:10)

1. Nachal'nik finansovogo otdela Sverdlovskogo sovnarkhosa.  
(Sverdlovsk Province--Finance)

KONONOV, D.

Financial and credit planning. Den. 1 kred. 16 no.1:43-44 Ja '58.  
(MIRA 11:3)

1. Nachal'nik finansovogo otdela Sverdlovskogo sovmarkhoza.  
(Finance)

KONONOV, D.

Results of the reorganization in administering the economy.

Fin. SSSR 19 no.1:61-62 Ja '58.

(MIRA 11:2)

1. Nachal'nik finansovogo otdela Sverdlovskogo sovnarkhoza.  
(Sverdlovsk--Finance)

**KONONOV, D.**

Strengthen rather than liquidate. Fin. SSSR 19 no.9:41-42  
8 '58. (MIRA 11:10)

1. Nachal'nik finansovogo otdela Sverdlovskogo sovnarkhosa.  
(Finance)



KONONOV, D.

Coordinate changes in applications for credit. Den. i kred. 17  
no. 6:88-89 Je '59. (MIRA 12:10)

1. Nachal'nik finansovogo otdela Sverdlovskogo sovnarkhosa.  
(Sverdlovsk Province--Credit)

KONONOV, D.

More about shortcomings in financial planning. Fin.SSSR 23  
no.6:50-52 Je '62. (MIRA 15:7)

1. Nachal'nik finansovogo otdela Sverdlovskogo sovnarkhoza.  
(Sverdlovsk Province--Industrial management)  
(Sverdlovsk Province--Finance)

IVLIYEV, L.A.; KONONOV, D.G.

*Hylemia laricicola* Karl, a widespread larch pest on Kamchatka. Izv.  
Sib.otd.AN SSSR no.9:157-163 '60. (MIRA 13:11)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR.  
(Kamchatka--Larch--Diseases and pests)

KURENTOV, A.I.; KONONOV, D.G.

Bark beetles (Coleoptera, Ipidae) of Kamchatka. Ent.oboz. 40  
no.3:595-601 '61. (MIRA 15:3)

1. Dal'nevostochnyy filial Sibirskogo otdeleniya AN SSSR,  
Vladivostok.

(Kamchatka—Bark beetles)

IVLIYEV, L.A.; KONONOV, D.G.

Some mass pests of conifer seeds in Kamchatka. Soob. DVFAN SSSR  
no. 15:83-88 '62. (MIRA 17:9)

1. Dal'nevostochnyy filial imeni Komarova Sibirskogo otdeleniya  
AN SSSR.

IVLIYEV, L.A.; KONONOV, D.G.

Longicorn beetles of Kamchatka. Soob. DVFAN SSSR no.19:  
117-123 '63. (MIRA 17:9)

1. Biologo-pochvennyy institut dal'nevostochnogo filiala  
Sibirskogo otdeleniya AN SSSR.

KONONOV, D. R.

O dopuskakh na razmery litykh detalei. (Vestn. Mash., 1950, no. 10, p. 53-55)

Tolerances for dimensions of cast machine parts.

DLC: TN4.V4

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

KONONOV, D. R.

PA 196T98

USSR/Metals - Steel, Casting, Methods Jul 51

"Risers With Air Pressure in Technology of Steel Casting," P. I. Gorkusha, D. R. Kononov, Y. A. Murizyanov, Engineers, "Bolshevik" Plant, Lenin-grad

"Litsey Proizvod" No 7, pp 10-12

Discusses various types of castings which may be fabricated with application of compressed air in blind risers, preps of molds and pouring procedure. Yield of sound castings increases to 70-80% sometimes 90% compared with 50-55% obtainable with ordinary risers. Conservation of

196T98

USSR/Metals - Steel, Casting, Methods Jul 51  
(Contd)

liquid metal amounts to 24%. Method is effective also for cast iron and for copper- and aluminum-base alloys.

196T98



LUPYREV, I. I. (Engr.) KONONOV, D. R., (Prof., Dr. Tech. Sci.) GULYAYEV, B. B.

"Prevention of Hot Cracks."

in book - Improving the Quality of Steel Castings; Transaction of the All-Union Conference, Moscow, Mashgiz, 1958. 214 p.

The authors discuss methods of preventing hot cracks in castings caused primarily by clinging of the sand mold to the casting as the latter shrinks and by unsatisfactory mechanical properties of the steel at the crystallization temperature. It is recommended that the mold be designed so as to lessen its grip on the casting during shrinkage. This may be accomplished by making the mold more flexible, by maintaining definite distances between flask ribs and projecting parts of the casting. etc. The casting may be strengthened during the solidification period by the use of external coolers and by keeping the sulfur content of the casting below 0.045 percent.

34058

3/128/62/000/002/001/007  
A004/A127

181100

AUTHORS: Gulyayev, B.B.; Alekseyev, P.Ye.; Kononov, D.R.; Stepanov, N.M.

TITLE: High-strength cast steel of good weldability

PERIODICAL: Liteynoye proizvodstvo, no. 2, 1962, 1 - 4

TEXT: The authors point out that the steel grades 30XHMЛ (30KhMNL), 30XHBЛ (30KhNVL) and 30ДХСНЛ (30DKhSNL) with  $\sigma_s$  exceeding 50 kg/mm<sup>2</sup> according to ГОСТ (GOST) 7832-55 have no good weldability and unsatisfactory casting properties, while the steel grades 10XНДТЛ (10KhNDTL), 13XНДФТЛ (13KhNDFTL) and 08ГДНФЛ (08GDNFL), though of good weldability, are no high-strength steels, with  $\sigma_s$  not exceeding 40 - 45 kg/mm<sup>2</sup> after heat treatment. Investigations were carried out with compositions containing the following alloying additives: 0.8 - 1.4 % Si, 1.2 - 1.4 % Mn, 0.8 - 1.5% Cr, 0.8 - 3.0% Ni, 0.2 - 0.3% Mo, 0.5 - 0.8% W, 0.1 - 0.2% V, 0.1 - 0.2% Ti, 0.5 - 2.5% Cu, 1.5 - 1.8% Al, 0.2 - 0.3% Ce. The following scientific workers participated in the development, investigations and introduction of steel grades of good weldability: I.A. Shapranov, P.I. Garkushka, P.Ye. Kovalenko, N.A. Shuvalova and N.I. Smirnova. The authors describe various tests being carried out with specimens of different steels, e.g., 12CFЛ

Card 1/2

34058

S/128/62/000/002/001/007  
A004/A127

High-strength cast steel of good weldability

(12S3FL), 12CH2ΦЛ(12СН2ФЛ), 12Х2НМЛ(12ХН2НМЛ), 12ДН2ΦЛ(12ДН2ФЛ), 12ДЧ2ΦЛ(12ДСН2ФЛ) and 12ДГΦЛ(12ДГФЛ), of which the 12S3FL, 12SN2FL and 12DGFL grades had  $\sigma_s$  of less than 50 kg/mm<sup>2</sup>, while the remaining grades ensured  $\sigma_s = 50 + 50$  kg/mm<sup>2</sup> in 100 mm cross sections. Tests on a special device revealed that the mechanical properties of all experimental steel grades near the crystallization temperature were not inferior to the 35Л(35L) grade. The optimum combination of mechanical properties, weldability and technological properties was shown by the grades 12DGFL, 12DN2FL, 12DSN2FL and 12SN2FL, of which a test lot was smelted in a basic electric arc furnace with subsequent casting of components of intricate configuration. Technical data presented in a table show that grade 12DN2FL steel having a good weldability, possessed  $\sigma_s$  of not lower than 55 kg/mm<sup>2</sup> combined with a high ductility and notch toughness. The authors report on investigations being carried out to establish the most favorable heat-treatment conditions for the above-mentioned steel grades, present a number of comparative graphs and tables, and, in their conclusion, especially recommend the 12DGFL grade steel of good weldability and the high-strength 12DN2FL grade steel possessing an excellent weldability to be used extensively and to be included in the GOST-standard. There are 6 figures and 4 tables.

Card 2/2

GULYAYEV, B.B.; ALEKSEYEV, P.Ye.; KONONOV, D.R.; STEPANOV, N.M.;  
Prinimali uchastiye: SHAPRANOV, I.A.; GARKUSHA, P.I.; KOVALENKO,  
P.Ye.; SHUVALOVA, N.A.; SMIRNOVA, N.I.

High strength foundry steel with good weldability. Lit.proizv.  
no.2:1-4 G '62. (MIRA 15:2)  
(Steel castings--Welding)

VLASOV, Aleksey Fedorovich; GAMARNIK, Yevgeniy Yefimovich; BORIN,  
Ivan Sergeyevich; KONONOV, D.R., red.

[Drying foundry molds and cores by means of infrared gas  
burners] Sushka liteinykh form i sterzhnei gazovymi go-  
relkami infrakrasnogo izlucheniia. Leningrad, 1964. 20 p.  
(MIRA 17:11)

S/032/62/028/007/010/011  
B104/B102

AUTHORS: Abramson, I. S., Kononov, E. Ya., Mogilevskiy, A. N., Murzin, S. N., and Slavnyy, V. A.

TITLE: A photoelectric device for precisely recording Raman spectra of light

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 7, 1962, 875 - 877

TEXT: A double-beam device was designed, in which the beams are modulated with one frequency, the reference beam and the scattered beam being focused onto a light pickup alternately. The switch-over frequency (23 per sec) is such that the contours of spectral lines can be recorded with great accuracy. Behind the modulator (Fig. 1) the light beam is focused onto a spectral device (4) and thence onto a photomultiplier. The reference beam is led past the spectral apparatus, passed through a blue filter (3), and finally fed to the photomultiplier (5). The signals of the scattered light and that of the reference beam are amplified and fed to a ratiometer which works on the principle of an ЭПН-09 (EPP-09) potentiometer. An automatic voltage divider controls the sensitivity

Card 1/2

S/032/62/028/007/010/011  
B104/B102

A photoelectric device for...

required for Raman lines of different intensities. The Raman line frequency is measured with a Fabry-Perot standard. There are 2 figures. ✓

ASSOCIATION: Komissiya po spektroskopii Akademii nauk SSSR (Commission on Spectroscopy of the Academy of Sciences USSR).

Fig. 1.. Block diagram of device.  
Legend: (1) source; (2) modulator; (3) light filter; (4) spectral device;  
(5) photomultiplier; (6) amplifier; (7) synchronous detector; (8) high-voltage source; (9) automatic voltage divider; (10) ratiometer.

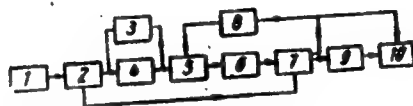


Fig. 1

Card 2/2

MANDEL'SHTAM, S.L.; FEDOSEYEV, S.P.; KONONOV, E.Ya.; LEBEDEV, S.V.

Reproduction of the portion of the solar shortwave spectrum in a  
laboratory. Opt. i spektr. 18 no.5:923-925 My '65.

(MIRA 18:10)



L 1387-66 EMT(1)/EPF(c)/EPA(w)-2/EWA(m)-2/T

TJP(c)

ACC NR: AP5017910

UR/0051/65/019/001/0145/0146  
535.33: 537.66: 546.294

AUTHOR: Kononov, E. Ya.; Mandel'shtam, S. L.

TITLE: Spectra of multiply ionized krypton atoms

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 145-146, and insert facing p. 146

TOPIC TAGS: krypton, gas ionization, electric discharge ionization, ionized plasma, plasma pinch, ionization spectrum

ABSTRACT: The research was stimulated by the fact that there are few published data on the spectra of multiply ionized gases and by the increasing importance of this subject to plasma physics. The ion source was a theta pinch device consisting of a quartz chamber 50 mm in diameter, in which a discharge was produced by a coil fed from a capacitor bank (36  $\mu$ f, 30 kv). The current through the coil was in the form of damped oscillations with a period of 12  $\mu$ sec and produced a maximum magnetic field of 60 kOe. The chamber was filled with hydrogen mixed with 10% krypton to a total pressure on the order of 0.1 mm Hg. The chamber was in direct contact with the slit of a DFS-6 vacuum diffraction spectrograph. High speed photographs of the process, taken with an SFR camera, indicate that the gas is ionized during the first half-cycle of the magnetic field. During the second and several subsequent half-cycles the plasma experiences shock compression accompanied by intense luminescence. The

Card 1/2

L 4387-66

ACC NR: AP5017910

3

spectrum of the krypton in the 65-110 Å range exhibited clearly groups of lines having as their analogs the corresponding line groups of Rb, Sr, and Y. The close similarity of the spectra of Kr and Rb suggests that they are due to transitions of the same type. The considerable line intensity indicates that the process of multiple-ion production is highly efficient. "The authors thank S. V. Lebedev for participating in the construction of the equipment." Orig. art. has: 2 figures 44,55

ASSOCIATION: None

SUBMITTED: 05Jan65

ENCL: 00

SUB CODE: 0P

NR REF SOV: 002

OTHER: 006

Card 2/2

UP/0051/65/018/005/0923/0925 28

APR 01 1966

Author: Mandel'shtam, S. L.; Fedoseyev, S. V.  
Lebedev. S. V.

TITLE: Laboratory reproduction of the short wavelength section of the solar spectrum

SOURCE: Optika i spektroskopiya, v. 18, no. 5, 1965, 923-925

TOPIC TAGS: solar corona, solar plasma, solar spectrum, solar UV radiation, high temperature plasma, controlled thermonuclear reaction

ABSTRACT: Interest in this section of the spectrum is prompted by the satellites and rockets take in order to obtain the spectra of the solar corona. More precisely identification of the corresponding lines is necessary for the obtaining of these spectra about the chemical compositions and physical state of

Card 1/3



NAME: [illegible]

22

[illegible]

[illegible]

[illegible]

[illegible]

Card

3/3

KLEBANOV, L.D.; KONONOV, E.Z.; SHAROVA, R.K.; ZARKHIN, M.M.

Problems of mechanization, standardization of personnel  
and expenditure of materials in municipal electric power  
distribution networks. Trudy LIEI no.51:236-262 '64.  
(MIRA 18:11)

*G. A. KONONOV*

USSR / Diseases of Farm Animals. Diseases Caused  
by Bacteria and Fungi.

R-1

Abs Jour: Ref Zhur-Biol., No 2, 1958, 7286

Author : G. A. Kononov  
Inst : Leningrad Veterinary Institute  
Title : Characteristics of the Microflora of Bursitis  
in Large Horned Cattle.

Orig Pub: Sb. rabot. Leningrad. vet. in-ta, 1956, vyp. 18,  
27-33.

Abstract: Upon bacteriological examination in 77 animals  
acute and chronic serous and sero-fibrinous bur-  
sitis, which ran a clinically aseptic course, were  
discovered, mainly of the pyogenic cocci, in  
the bursa of 36 animals. In seven cases of serous  
and sero-fibrinous bursitis, brucella were isolat-  
ed. Pyogenic microbes, present for a long time  
in a serious or sero-fibrinous ettusion, did

Card 1/2

USSR / Diseases of Farm Animals. Diseases Caused  
by Bacteria and Fungi.

R-1

"APPROVED FOR RELEASE: 06/19/2000" CIA-RDP86-00513R000824320001-1

Abs Jour: Ref Zhur-Biol., No 2, 1958, 7286

Abstract: not produce a suppurative inflammation. The  
author recommends, in the treatment of animals  
with clinically aseptic oozing bursitis, the  
taking into consideration of the findings of the  
bacteriological examination of the ettusion.

Card 2/2

KONONOV, G.A., kand. veter. nauk; POLYAKOV, P.Ya., red.; BARANOVA,  
L.G., tekhn. red.

[Concise manual for a veterinary feldsher] Kratkii spravochnik veterinarnogo fel'dshera. Izd.2., perer. i dop. Moskva, Sel'khozizdat, 1963. 599 p. (MIRA 17:1)



KONONOV, G.G.

Role of American capital in the revival of the military and industrial potential of Germany during the period of partial stabilization of capitalism. Trudy KTIPP no.20:121-135 '59. (MIRA 13:12)

(Germany--Foreign economic relations--United States)

LEBEDEV, Nikolay Nikitich. Prinimal uchastiye KOMONOV, G.M., inzh.  
BARANOV, A.N., red.; SHURYGINA, A.I., red. izd-va; BOTVINKO, M.B.,  
tekhn. red.

[Engineering geodesy; geodetic operations in city planning and  
construction] Inzhenernaia geodeziia; geodezicheskie raboty pri  
planirovke i stroitel'stve gorodov. Moskva, Izd-vo geodes. lit-ry.  
Pt. 5. 1960. 181 p. (MIRA 14:3)  
(Surveying)

KOSHEVATSKLY, I.S.; KOLYCHEV, V.V.; KONONOV, G.N., veterinarnyy vrach

Sanitation measures during tuberculosis in cattle. Veterinariia  
41 no.3:31-33 Mr '65. (MIRA 18:4)

1. Glavnyy veterinarnyy vrach Chuguyevskogo proizvodstvennogo upravleniya Khar'kovskoy oblasti (for Koshevatskiy).
2. Zaveduyushchiy Pechorskoy veterinarnoy laboratoriyey (for Kolychev).
3. Pechorskaya veterinarnaya laboratoriya (for Kononov).

KONONOV, G. N. and KOLICHEV, V. V.

"Leptospirosis in lambs in the polar region."

Veterinariya, Vol. 37, No. 8, 1960, p. 31

Vet. Dr. - Pechora Inter-District Vet. Bacteriol. Lab, Komi ASSR

L 08556-07 EWT(1) UR

ACC NR: AP6034053

(A,N)

SOURCE CODE: UR/0346/66/000/011/0042/0045

AUTHOR: Kolychev, V. V.; Kazanovskiy, Ye. S.; Kononov, G. N.

ORG: Izhmo-Pechora Scientific Research Veterinary Station (Izhmo-Pechorskaya nauchno-issledovatel'skaya veterinarnaya stantsiya)

TITLE: Experimental toxoplasmosis of reindeer

SOURCE: Veterinariya, no. 11, 1966, 42-45

TOPIC TAGS: animal disease, toxoplasmosis, reindeer, veterinary medicine

ABSTRACT: Wild reindeer were infected by various routes with strain Rt-131 toxoplasma. Pathological and histological changes were then observed. Temperatures generally reached their maximum during the third day after infection and animals whose temperature reached 40—41C died. Breathing became rapid and hematology correlated with that of domestic animals. In general, the laboratory strain was more virulent for these animals than a strain isolated from members of a wild herd. Orig. art. has: 1 figure. [W.A. 50]

SUB CODE: 06/ SUBM DATE: none

Cord 1/1

UDC: 619.616.993.192-092.9:636.294

KOLYCHEV, V.V., veterinarnyy vrach; KONONOV, G.N., veterinarnyy vrach

Leptospirosis of calves in the Arctic. Veterinariia 37  
no.8:31-33 Ag '60. (MIRA 15:4)

1. Pechorskaya mezhrayonnaya vetbaklaboratoriya Komi ASSR.  
(Komi A.S.S.R.--Leptospirosis)  
(Calves--Diseases and pests)

KONONOV, I.

The Baltic and International Maritime Conference is 60 years  
old. Mor. flot 25 no.10:43-44 0 '65. (MIRA 18:11)

1. Ekspert Vsesoyuznogo ob'yedineniya "Sovfrakht".

KONONOV, I.; DAVYDOV, V.

Share technical knowledge with the masses. Mast.ugl. 9 no.7:  
10 J1 '60. (MIRA.13:7)

1. Sekretar' partorganizatsii shakhty No.40 kombinata Vorkutugol'  
(for Kononov).
2. Predsedatel' profsoyuznogo komiteta shakhty  
No.1 "Kapital'naya" kombinata Vorkutugol' (for Davydov).  
(Coal miners)  
(Technical education)



KONONOV, Ivan Anatol'ievich, -1885-1959

[Roads to Calvary of the Russian Navy; an historical sketch and sea stories] Puti k Golgofie russkogo flota; istoricheskii ocherk i morskoe rasskazy. New York, Zarubezhnaia morskaiia biblioteka, 1961. 161 p. illus., fold.map. (MIRA 15:5)  
(Russia--History, Naval) (Tsushima, Battle of, 1905)

KONONOV, I.A.

Determining the depth at which to fix anchor bolts.  
[Trudy] NII osn. no.51:68-74 '62. (MIRA 16:2)  
(Machinery—Foundations)

KONONOV, I.I., podpolkovnik; KURKOV, L.F., mayor.

Training pilots prior to flights under difficult conditions. Vest.  
Vost. Fl. 39 no.4:48-52 Ap '57: (MLBA 10:9)  
(Flight training)

ZAKIROV, R.A.; YEREMIN, A.D.; GOLUSHKO, M.L.; KONONOV, I.M.; MYAKISHEV, I.G.

Our prospects. Zhil.-kóm. khoz. 9 no.1:3-4 '59. (MIRA 12:3)

1. Ministr kommunal'nogo khozyaystva Bashkirskoy ASSR (for Zakirov).
2. Zaveduyushchiy Khabarovskim kraykomkhozom (for Yerebin).
3. Zaveduyushchiy Amurskim oblkomkhozom (for Golushko).
4. Nachal'nik planovogo otdela Kurganskogo oblkomkhoza (for Kononov).
5. Zaveduyushchiy Mirmanskim oblkomkhozom (for Myakishhev).

(Municipal services)

KONONOV, I.P., inzh.

Increase in the operational reliability of motor generators for  
driving dust supplying units. Energetik 9 no.3:16-18 Mr '61.  
(MIRA 14:7)

(Boilers) (Rotary converters)

XONONOV, I. P., inst.

Electrical heating of a river water intake system of a Heat and  
Electric Power Plant. Energetik 12 no. 11:20-23 N '64  
(MIRA 18:2)

PRIVALOV, Leonid Mikhaylovich; KONONOV, K.I., otv.red.; VINTFEL'D, L.G.,  
red.; KONTOROVICH, A.I., tekhn.red.; LEVOCHKINA, L.I., tekhn.red.

[Documentation for the repair and modernization of ships]  
Dokumentatsiia dlia remonta i modernizatsii sudov. Leningrad,  
Gos.soiuznoe izd-vo sudostroit.promyshl., 1959. 97 p.  
(MIRA 12:7)

(Ships--Maintenance and repair)

KONONOV, I.P., inzh.

Protection of the flexible connections of generators against  
atmospheric overvoltage. Energetik 10 no.7:21-23 J1 '62.  
(MIRA 15:7)  
(Lightning protection)



AID P - 3773

Subject : USSR/Electricity  
Card 1/1 Pub. 26 - 15/29  
Author : Kononov, I. V., Eng.  
Title : Execution of tackle works with the help of a metallic mast  
Periodical : Elek. sta., <sup>26</sup>10, 48-49, 0 1955  
Abstract : The author describes construction works of hydroelectric power stations where metal masts were used for tackle work. Two photographs.  
Institution : None  
Submitted : No date

KONONOV, I.V., inzh.

APPROVED FOR RELEASE: 06/19/2000 CIA-RDP86-00513R000824320001-1

2:133-144 '60.

(Liquid level indicators)

(MIRA 14:1)

(Electric instruments)

USSR/Soil Science - Physical and Chemical Properties of Soils.

J-2

Abs Jour : Ref Zhur - Biol., No 9, 1958, 39010

Author : Kononov, I.V.

Inst :

Title : ~~A Method of Filtration Control During the Study of Water-~~  
Permeability of Soils.

Orig Pub : Pochvovedeniye, 1957, No 3, 106-109.

Abstract : The described method is as follows: the examined sample of soil with an unknown filtration coefficient is installed over a second sample, the filtration coefficient of which is known beforehand. A part of the general pressure  $H$  is lost during filtration in the examined sample and another part  $h$  - in the control sample. It is possible to obtain experimentally this loss of pressure ( $H - h$ ) by observing the marks of water levels in piezometric pipes. To check the accuracy of water filtration through the sample, it is necessary to calculate the loss of pressure in the

Card 1/3

*Киев. Гидромелиорация. Inst.*  
- 8 -

KONONOV, I. V. Cand Tech Sci -- (diss) "Study of <sup>siltation</sup> ~~siltation~~ as a <sup>filtration-</sup> ~~filtration-~~  
<sup>means</sup> ~~process~~ device in irrigation ~~canals~~ canals." Kiev, 1959. 20 pp with diagrams  
(Min of Higher and Secondary Specialized Education UkrSSR. Ukrainian Inst of  
Engineers of Water Transport), 150 copies (KL, 52-59, 121

21

(

SOV/98-59-5-10/21

AUTHOR: Kononov, I.V., Engineer

TITLE: Calculating the Process of Silting as a Method to Fight Filtration

PERIODICAL: Gidrotekhnicheskoye stroitel'stvo, 1959, Nr 5, pp 35-37 (USSR)

ABSTRACT: The author rejects the existing data on silting as being incorrect. The chief object of his criticisms are the two treatises of T.A. Negovskaya - 1) The Silting as a Method to Fight Filtration in Canals, "Gidrotekhnicheskoye stroitel'stvo", 1948, Nr 7; and 2) Artificial Silting of Canals, treatises of the VNIIGiM "Problems of Irrigation", volume XXVI-XXVII, 1952. The author then attacks Professor V.A. Shaumyan for his recommendation to use the above-mentioned data and cites the studies of Professor Ye.M. Sergeyev on the depth of the silting process. In conclusion, the author stresses the necessity to intensify research in this field and thus

Card 1/2

SOV/98-59-5-10/21

Calculating the Process of Silting as a Method to Fight Filtration

develop more reliable data on the process of silting.  
There is 1 table and 9 Soviet references.

Card 2/2

KONONOV, I.V., kand.tekhn.nauk

Arrangement of non-reinforced trenches. Mont. i spets. rab.  
v stroi. 24 no.9:27-30 S '62. (MIRA 15:9)  
(Excavation)

ARISTAROV, N.V., inzh.; KONONOV, I.V., kand.tekhn.nauk

Comparative evaluation of prefabricated linings. Energ.stroi.  
no.30461-65 '62. (MIRA 16:2)

1. Stroitel'stvo Kremenchugskoy gidroelektrostantsii (for Aristarov).
2. Nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii  
stroitel'nogo proizvodstva Akademii stroitel'stva i arkhitektury  
UkrSSR.

(Precast concrete construction)

KONONOV, I.V., inzh.

High pressure relief valves. [Nauch. trudy] ENIKMASHa 6:81-104  
:63. (MIRA 16:9)  
(Hydraulic presses--Safety appliances) (Valves)



KONONOV, I.V., inzh.; SHNEYBERG, V.M., inzh.

Control mechanism for steam- or air-lift drop forging hammers.  
[Nauch. trudy] ENIKMASHa 6:118-128 '63. (MIRA 16:9)  
(Forging machinery) (Servomechanisms)

KONONOV, I.V., kand.tekhn.nauk; GOL'DGOR, V.A.

Milan method of constructing tunnels and underground crossings.  
Transp.stroi. 13 no.9:70-72 S '63. (MIRA 16:12)

KONONOV, I.V.; SHNEYBERG, V.M.

Mechanizing the control of steam-air swaging and forging machinery. Kus.-shtam. proizv. 4 no.1:35-37,38 Ja '62.  
(MIRA 17:3)

KONONOV, I.V., kand. tekhn. nauk

Lowering the unrush of ground water into strip mines by  
building a seepage barrier. Gor. zhur. no.11:22-25 N '63.  
(MIRA 17:6)

1. Nauchno-issledovatel'skiy institut organizatsii i  
mekhanizatsii stroitel'nogo proizvodstva, Kiyev.